## Space Weather Forecast

Issued on Sunday, 07 November 2021 at 00:25 Local

**This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales**

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**Space Weather Forecast Headline: Slight chance of Moderate class flares. Chance of isolated G1/Minor geomagnetic storms on Days 1 and 2.**

**Analysis of Space Weather Activity over past 24 hours**

**Solar Activity:** There are currently four active regions on the visible disc. Two small Common class and several background class flares were evident in the last 24 hours, mostly from the southeast limb.
No Earth-directed coronal mass ejections have been seen in available imagery.

**Solar Wind / Geomagnetic Activity:** The solar wind speed remained mostly Elevated with a peak of 633 km/s at 06/0132UTC. The important northwards/southwards direction of the solar wind was mostly weak, after starting the period at Moderate levels. Geomagnetic levels ranged between Quiet and Active.

**Energetic Particles / Solar Radiation:** The count rate of energetic particles (high energy protons) has returned to background levels with no solar radiation storms observed.

**Four-Day Space Weather Forecast Summary**

**Solar Activity:** Solar activity is forecast to be Low or Very Low through the forecast period with a slight chance of a Moderate class flare.

**Solar Wind / Geomagnetic Activity:** Solar winds starting at Elevated levels may return to Strong levels for a time on Day 1 and early on Day 2 (7&8 Nov), before probably then easing back to Slightly Elevated levels on Days 3&4 (9&10 Nov.). Geomagnetic activity is likely to be Quiet to Unsettled with an increased chance of Active to G1/Minor Storm intervals on Day 1 (7 Nov.) and perhaps early on Day 2 (8 Nov.).

**Energetic Particles / Solar Radiation:** The count rate of energetic particles (high energy protons) is expected to be close to background levels.

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Met Office

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**Geomagnetic Storms:**

| Geo-Magnetic Storm Probability (Exceedance) | Level | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Minor or Moderate | G1 to G2 | No | 30 | 30 | 10 | 1 |
| Strong | G3 | No | 1 | 1 | 1 | 1 |
| Severe | G4 | No | 1 | 1 | 1 | 1 |
| Extreme | G5 | No | 1 | 1 | 1 | 1 |

**Radio Blackouts - X Ray Flares:**

| X Ray Flares Probability | Level | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Active | R1-R2 M Class | No | 5 | 5 | 10 | 10 |
| Very Active | R3 to R5 X | No | 1 | 1 | 1 | 1 |

**Solar Radiation Storms - (High Energy Protons):**

| Radiation Storms Probability (Exceedance) | Level ($cm^{-2}$ $sr^{-1}$ $s^{-1}$) | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Active | ≥ S1 | No | 1 | 1 | 1 | 1 |
| Very Active | ≥ S3 * | No | 1 | 1 | 1 | 1 |

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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